

EFFECTIVENESS OF AUTOMATED ENFORCEMENT SYSTEM (AES) IN REDUCING RED LIGHT VIOLATION (RLV) BEHAVIOURS: A CASE STUDY IN KUALA LUMPUR

Kabit, M.R.^{1*}, Sabihin, N.A.² and Wan Ibrahim, W.H.³

^{1,2,3}Faculty of Engineering, Universiti Malaysia Sarawak, 94300 Kota Samarahan, Sarawak

Date received: 25/11/16, Date accepted: 20/4/16

Corresponding author's email: kraduan@unimas.my

Abstract— The national statistics indicates that red light violations (RLV) have become a significant safety problem throughout the nation. As a result, the Malaysian government has initiated the installation of automated enforcement system (AES) to reduce RLV related crashes at identified critical locations particularly in Kuala Lumpur region. The primary aim of this study was to evaluate the effectiveness of AES installation in reducing RLV at signalised intersections using a case study at Jalan Ipoh, Kuala Lumpur. Before and after AES installation data were collected and were analysed using a statistical tool. T-test results indicated that the installation of AES has significantly reduced RLV behaviours at the studied signalised intersection. The results of this study provide a useful insight on the benefits of AES in decreasing intersection related crashes by means of reducing RLV behaviours among the road users through AES installation.

Keywords: red light violation, signalised intersection, Automated Enforcement System (AES), t-test

1.0 INTRODUCTION

One of the major factors that have led to signalized intersection crashes is red light violation (RLV) behaviours. In Malaysia, intersection collisions have resulted in 207 deaths and 706 injuries in 2011 [1]. RLV occurs when the front wheels of a vehicle entered the defining boundary of an intersection (usually the stop line) after the traffic signal had changed to the red phase and the vehicle proceeded through the intersection while the signal was red [2].

According to the National Highway Traffic Safety Administration's (NHTSA) Traffic Safety Facts 2008 Report [3], there were more than 2.3 million reported intersection-related crashes, resulting in more than 7770 fatalities in the US. Of these, 762 were caused by red-light running [4]. In addition, an estimated 165,000 people were injured annually by red-light runners as reported by NHTSA's Fatality Analysis Reporting System. The results obtained from National Survey of Speeding and Other Unsafe Driver Actions [5], revealed that 97% of drivers feel that other drivers running red-lights are a major safety threat.

As the number of registered vehicles Malaysia is indicating a steady rising trend, it is expected that more vehicles related crashes will occur on Malaysian roads in the future. Thus, to mitigate the rising trend of road crash occurrence in Malaysia, the government has deployed AES installation at 14 black spot locations in Perak, Selangor and Kuala Lumpur in 2012. Three types of AES camera which are mobile camera, fixed speed camera and red light camera have been installed together with an AES warning sign which is visible 2-3 km before the exact location of AES in operational.

This study aims to measure the effectiveness of AES in reducing the number of RLV at signalised intersection.